Emotional Diary

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Capstone Design Project

Abstract

Through diary writing, we aim to develop a new diary app that allows AI to extract its emotions from text and link them with mental health care. Through this, we want to develop an application with the ability to pursue three emotional management simultaneously, including diary writing, routine practice, and stress.

1 Introduction

According to a market survey, Writing diaries is one of the most popular way to record our daily life. Especially, the usage rate of diaries among teenagers and 20s is more than 60% and it is high compared to other ages. We found that managing stress and mental health becomes important part of self-development for 20s. Also, nowadays, many twenties are using diaries or planner to achieve their daily goals.
More than 70% of MZ generation responded they need to relieve their stress and care their mental health. Considering these things, We decided to develop diary applications for MZs. By writing diaries, users can define their emotions and they can connect it to mental healthcare by using this app The application will have all the following functions – writing diary, managing daily goals and mental care.

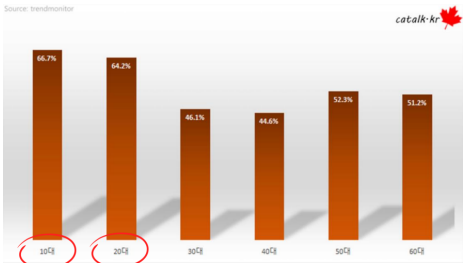

Figure 1: Survey Result

2 Problems & Motvation

There are already various diary apps in the market, but there are many common problems.
According to the reviews of existing diary apps, There are few choices of emotions and we can choose just one emotion for a day. Also, we can write diaries after we choose an emotion. However, actually, we know that it is sometimes hard for us to define what emotions we felt on that day.
So we're going to use AI to extract words that represent emotions from our textual diaries, Based on PLUTCHIK'S WHEEL OF EMOTIONS, we will be able to express and record emotions more diversely.
The emotional expression part is based on the emotional bead of the movie 'Inside Out'. First, when you write a diary in text, AI extracts emotional words from the text. Then, based on the extracted words, the user can color the emotion bead for that emotion.
You only need to match the colors of the beads when new emotional words are extracted, and the previously matched words are preserved. Finally, we're going to mix the colors of the extracted emotional beads and express them as a single bead for a day.
Emotional beads are piled up one by one every day, so you can check your emotional changes by period and check the statistics on what emotions you felt the most.

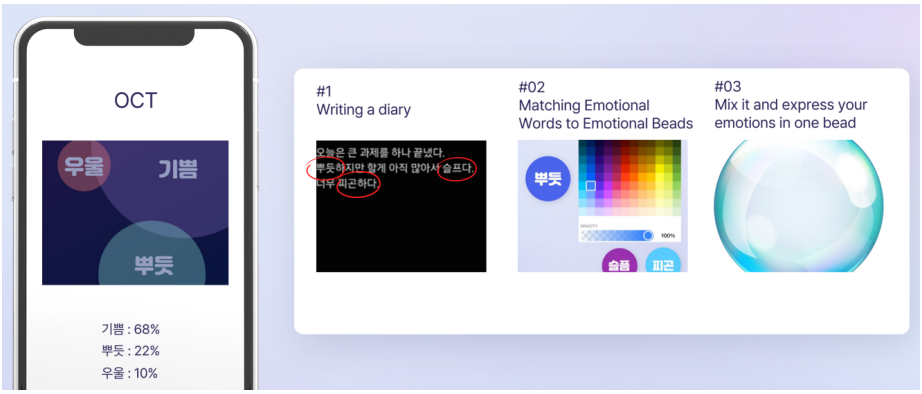

Figure 2: Prototype

3 Related Work

We are going to develop basic apps using firebase and cross-platform framework flutter, and use Large Language Model (LLM) as AI model. We have decided to use a state-of-the-art Large Language Model (LLM) known for achieving high performance in various natural language processing tasks to extract emotional

expressions LLMs have numerous open LLMs, and among the many available models, we will select the model that best extracts emotions in Korean. We plan to create several data to test the performance of each model. In addition, if the selected model does not provide an API because it has to be run in the app environment, we will use FastAPI and others to create an API.

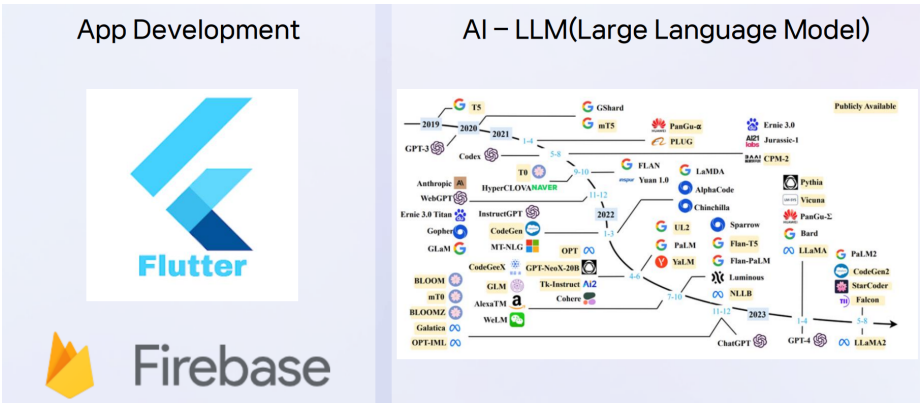

Figure 3: Development